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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/520,374	JELINEK ET AL.	
	Examiner	Art Unit	
	JIALONG HE	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 April 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2,3,6,14,19,32,63-65,67,69-72, 74-78,81-89,91-95 and 114-142* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *142* is/are allowed.

6)☒ Claim(s) *2, 3, 14, 19, 32, 63-65, 67, 69-72, 74-78, 81-89, 91-95, 114-120, 122-125, 127-130, 131-135, 137-140* is/are rejected.

7)☒ Claim(s) *6,114,121,126,130,136 and 141* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Request for Continued Examination

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 04/23//2010 has been entered.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Objections

3. Claim 126 and 141, is objected to because of the following informalities:

Claim 126, line 10 recites the limitation "**a second communication scheme**". Since line 5 already has an antecedent "a second communication scheme", it should use "the second communication scheme" in line 10.

Claim 141 has similar problem as claim 126.

Appropriate correction is required.

Response to Arguments

4. Applicant's arguments filed on 04/23/2010 have been fully considered but they are not persuasive for the following reasons.

In the initial note, the applicant states that although the claims are similar but they are not identical. The Examiner grouped them together and failed to consider the claims individually.

The Examiner agrees some of these claims are similar but not identical. If these claims are identical, they would be objected as duplicated claims. The applicant presented more than sixty claims which recite various combinations of a few features. For example, the applicant recites a feature from a transmitter point of view including method and device claims. The applicant recites the same feature from receiver point of view, including method and device claims (the device claims have two similar sets, one recites particular components, one set uses "means for"). It would be more confusing rather than clarify to list each claim individually in the office action. The applicant also presents arguments in this way. For example, the applicant only presents arguments for claim 14 (from transmitter point of view) and states that other claims 75, 81, 92 (from receiver point of view) recite similar features (Remarks, page 27). The applicant also states that independent claims 19, 32, 85 (Remarks, page 26)

are similar to claim 14. In the following rejection, the Examiner groups the independent claims according to transmitter (14, 32, 85) and receivers (75, 81, 92).

The applicant states it is an error in rejecting claims 14, 32 and 35 that reference El-Maleh is not used. The Examiner notes if a claim is obvious under two references (e.g., A in view of B), the claim is still obvious under the same two reference in view of another reference (e.g., A in view of B and further in view of C).

5. A brief summary of the disclosed invention and prior art cited in the office action.

The disclosed invention is about interoperation between CDMA2000 system (using VBR-WB, also known as VMR-WB codec in the field of speech coding) and 3GPP system (using AMR-WB codec). The full-rate of CDMA2000 is compatible with the full-rate of 3GPP, but half rate is not compatible. When CDMA2000 system needs to insert in-band signaling, the full rate is reduced to half rate using dim-and-burst method. At the receiving end, the half rate is restored to full rate by randomly generating parameters (codebook indices) to replace the dropped parameters. The restored pseudo full rate signal, which is compatible with the 3GPP system, is further transmitted in the 3GPP system.

Proctor (US Pat. 5,519,779) discloses a method of in-band signaling using a dim-and-burst (which is similar to the invention) in wireless communication. Proctor

discloses when two CDMA systems are communicating in full-rate, if signaling needs to be inserted, the system maps speech encoded at a high rate to a lower rate (e.g., from full-rate to half-rate) so that the in-band signaling could be inserted.

Chen (US Pat. 6,014,621) discloses a split wideband speech coding method. Chen discloses (Chen, col. 2, lines 13-55) no bits are allocated for the frequency range [4 kHz, 7 kHz] at the encoding side (i.e., dropping these coding parameters) in order to send the coded speech thought a channel with limited bandwidth. At a receiving side, these dropped coding parameters for high frequency components are regenerated to form a wideband encoded signal.

El-Maleh et al. (US PG Pub. 2002/0101844) discloses a method of interoperating two communication systems using different methods for comfort noise. A CDMA system uses discontinuous transmission (DTX) and GSM uses continuous transmission (CTX) for comfort noise. El-Maleh discloses converting DTX and CTX frames at a base station so that comfort noise in CDMA and GSM systems is interoperable. When converting CTX to DTX, the comfort noise is dropped at the base station and silence identification (SID) and noise parameters are sent. At the receiving mobile station, noise is regenerated based on transmitted noise parameters.

6. Regarding claim 14, the applicant argues (pages 22-25) that Proctor and Xu disclosed the information of frame indicating reducing speech coding rate from FULL

rate to HALF rate is not "involves dropping a portion of the signal-coding parameters". The applicant explained how to drop coding parameters by directing the Examiner attention to the disclosure. It appears the applicant would like the Examiner to interpret "dropping a portion of the signal-coding parameters" as "discarding some coding parameters and keeping the remaining coding parameters unchanged".

The Examiner notes "Office personnel are to give claims their broadest reasonable interpretation in light of the supporting disclosure. In re Morris, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim are not read into the claim. In re Prater, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969)" (MPEP p 2100-8, c 2, l 45-48; p 2100-9, c 1, l 1-4).

The Examiner notes both Proctor and Xu disclose in-band signaling using dim-and-burst method. Proctor reduces speech coding from a FULL rate to a HALF rate with less coding parameters. In other words, the Examiner interprets "dropping a portion of the signal-coding parameters" as **reducing the number of coding parameters**.

Regarding newly added limitation in claim 14, the argument (Remarks, pages25-27) is moot. A new reference to Chen is cited. Chen teaches discarding high frequency parameters at the sender and regenerating these high frequency parameters at the

receiving side. The combined teaching of Proctor, Xu and Chen teach the limitation "information enable ... obtain [] a version of the frame encoded in accordance with the first communication mode".

Regarding claim 81, the applicant argues (Remarks, pages 27-30), El-Maleh does not teach "in response to said information, generating replacement signal-coding parameters to replace the first portion of the signal-coding parameters dropped to reduce the bit rate during transmission of the frame",

The argument regarding claim 81 is moot. A new reference to Chen is cited for teaching the feature of generating replacement signal-coding parameters to replace the first portion of the signal-coding parameters dropped to reduce the bit rate during transmission of the frame. The combined teaching of Proctor, Xu and Chen teach all features in claim 81.

Claim Rejections - 35 USC § 103

7. Claims 2, 14, 32, 67, 71, 75, 76, 81, 85, 88, 92, 93, 116-118, 123, 124, 127,128, 132, 133, 138 and 139 are rejected under 35 U.S.C. 103(a) as being unpatentable over Proctor (US Pat. 5,519,779, previously cited, hereinafter referred to as Proctor) in view of view of Xu et al. (US pat. 6,885,638, previously cited, hereinafter referred to as Xu) and further in view of Chen (US Pat. 6,014,621, hereinafter referred to as Chen).

Regarding claims 14, 32 and 85, Proctor discloses a method and device comprising:

receiving a request to transmit a frame using a second communication mode to reduce bit rate during transmission of said frame, wherein the frame comprises signal-coding parameters representative of a sound signal and wherein the frame is encoded in accordance with a first communication mode (**fig. 1, also col. 3, line 35 – col. 5, line 60, in-band signaling using dim-and-burst method in wireless communication**);

in response to the request, dropping a portion of the signal-coding parameters to enable transmission of the frame using the second communication mode (**col. 5, lines 47- 67, rate reducer mapping a higher rate to a lower rate, e.g., from Full-rate to Half-Rate, which reduces the total number of signal coding parameters** (dropping a portion));

Proctor discloses a wireless communication system using CDMA. In order to insert in-band signaling, coding parameters of full-rate is reduced to half-rate to free bandwidth for signaling. Both Proctor and the instant applicant are in the same area of reducing bit rate of coding parameter for in-band signaling using dim-and-burst method.

Proctor discloses mapping a speech encoded at full-rate to a half-rate which implicitly teaches necessary information is inserted into the frame header to indicate

the bit rate changes. Proctor does not explicitly disclose what information is inserted in the frame header.

Xu discloses a system of using dim-and-burst for in-band signaling. Xu discloses inserting information in the frame header so that the frame could be selected and decoded based on the frame header (**Xu, fig. 3 and fig. 5, various information in the frame header to enable receiver to process the frame and obtaining communication mode**).

Proctor and Xu are analogous art and from a similar field of applicant's endeavor in wireless communication. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Proctor's teaching with Xu teaching to insert information such as communication mode, bit rate and other information necessary for correctly decoding the frame. One having ordinary skill in the art would have been motivated to make such a modification because adding the header information is absolutely necessary for properly transmitting and decoding the frame after it is modified.

Proctor and Xu do not explicitly discloses "obtain, from the frame as transmitted in accordance with the second communication mode, a version of the frame encoded in accordance with the first communication mode."

Chen discloses a method of encoding a wideband speech signal by dropping high frequency parameters between [4 kHz, 7 kHz] and regenerating these parameters at the decoder side (**Chen, fig. 10, col. 2, lines 11-55, at encoding side, not bits allocated for higher frequency; at decoding side, generating magnitude spectrum according to signal-to-masking ratio and generating phase spectrum randomly**).

Proctor, Xu, and Chen are analogous art and from a similar field of applicant's endeavor in speech coding. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine Proctor in view of Xu's teaching with Chen's teaching to obtain a version of frame encoded in accordance with full rate (wideband). One having ordinary skill in the art would have been motivated to make such a modification to improve sound quality (**Chen, col. 2, lines 12-55**).

Regarding claims 75, 81 and 92, Proctor discloses a device/method comprising:

means for receiving a frame using a second communication mode, wherein the frame comprises information and a second portion of signal-coding parameters (**Proctor, fig. 1, col. 3 – col. 4, in-band signaling using dim-and-burst, reducing encoded speech rate from full rate to half rate**(a second communication mode));

Proctor discloses a wireless communication system using CDMA. In order to insert in-band signaling, coding parameters of full-rate is reduced to half-rate to free bandwidth for signaling. Both Proctor and the instant applicant are in the same area

of reducing bit rate of coding parameter for in-band signaling using dim-and-burst method.

Proctor discloses mapping a speech encoded at full-rate to a half-rate which implicitly teaches necessary information is inserted into the frame header to indicate the bit rate changes. Proctor does not explicitly disclose what information is inserted in the frame header.

Xu discloses a system of using dim-and-burst for in-band signaling. Xu discloses inserting information in the frame header so that the frame could be selected and decoded based on the frame header (**Xu, fig. 3 and fig. 5, various information in the frame header to enable receiver to process the frame and obtaining communication mode**).

Proctor and Xu are analogous art and from a similar field of applicant's endeavor in wireless communication. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Proctor's teaching with Xu teaching to insert information such as communication mode, bit rate and other information necessary for correctly decoding the frame. One having ordinary skill in the art would have been motivated to make such a modification because adding the header information is absolutely necessary for properly transmitting and decoding the frame after it is modified.

Proctor and Xu do not disclose generating replacement for dropped encoding parameters and enable transmitting the restored speech in full rate (the first communication mode).

Chen discloses a method of encoding a wideband speech signal by dropping high frequency parameters between [4 kHz, 7 kHz], and regenerating these parameters at the decoder side (**Chen, fig. 10, col. 2, lines 11-55, not bits allocated for higher frequency at encoder side; generating magnitude spectrum according to signal-to-masking ratio and random phase at the decoder side. The generated parameters for higher frequency components together with parameters of low frequency components could be used (enabled) for transmitting speech at full rate**).

Proctor, Xu and Chen are analogous art and from a similar field of applicant's endeavor in speech coding. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine Proctor's teaching with Chen's teaching to generate replacement for dropped coding parameters. One having ordinary skill in the art would have been motivated to make such a modification because it could encode wideband speech and transmit over limited bandwidth and sound quality is improved (**Chen, col. 2, lines 12-55**).

Regarding claims 2, 71, 88, 117, 123, 138, 127 and 132, Proctor further discloses the first communication mode is a full-rate communication mode and the second communication mode is a half-rate communication mode (**Proctor, col. 5, table 1**).

Regarding claim 67, Proctor further discloses further comprising an initial step of encoding the sound signal in accordance with the first communication mode of the first communication scheme (**Proctor, col. 5, lines 47-67, initially encoded with full rate, reduced to half rate**).

Regarding claims 116, 118, 124, 128, 139 and 133 Proctor further discloses wherein the particular communication mode comprises a signaling half rate communication mode or an interoperable half rate communication mode (**Proctor, fig. 1, and col. 5, table, signaling using dim-and-burst, reducing rate from full to half, which is a signaling half rate communication mode**).

Regarding claims 76, 93, Chen further discloses wherein the means for generating replacement signal-coding parameters is further for randomly generating the replacement signal-coding parameters (**Chen, col. 2, lines 45-50, phase values are randomly selected**).

8. Claims 3, 19, 63, 65, 69, 74,78,82-84, 86,91,95,115,119,122,125,129,131, 134,135,137 and 140 are rejected under 35 U.S.C. 103(a) as being unpatentable over Proctor in view of view of Xu, Chen and further in view of El-Maleh (US PG Pub. 2002/0101844, previously cited, hereinafter referred to as El-Maleh).

Regarding claims 3, 63, 69, 74,78,82-84, 86,91,95,115,119,122,125,129,131, 134,135,137 and 140, Proctor discloses in-band signaling using dim-and-burst in a CDMA system (**Proctor, col. 5, table 1, full rate, half rate used in CDMA communication**),

Proctor does not disclose interoperable between two systems and the first rate of the first system is compatible with the second system and the second rate of the first system is not compatible with the second system.

El-Maleh discloses interoperability between CDMA (using CTX 1/8 rate) and GSM systems (using DTX) for generating comfort noise. The coding for active speech (e.g., full rate) is interoperable between two systems, but for inactive speech (comfort noise) at 1/8 rate of CTX is not compatible with DTX.

Proctor, Xu, Chen and El-Maleh are analogous art and from a similar field of applicant's endeavor in wireless communication. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made

to combine Proctor in view of Xu and Chen's teaching with El-Maleh's teaching of interoperation between first and second systems. One having ordinary skill in the art would have been motivated to make such a modification because it is more convenient that a user using CDMA system could communicate with other users using GSM system.

Regarding claims 19 and 65, Proctor discloses a system comprising a first station **(fig. 1, #12, mobile phone at sending end)**, second station **(fig. 1, #10, cell phone tower)** and third station **(#20, mobile phone at receiving end)**,

said first station comprising:

means for receiving a request to transmit a frame using a second communication mode a first communication scheme to reduce bit rate during transmission of said frame, wherein the frame comprises signal-coding parameters representative of a sound signal and wherein the frame is encoded in accordance with a first communication mode of the first communication scheme **(fig. 1, col. 3, line 35 – col. 6, line 65, mobile phone communication using dim-and-burst for signaling by dropping some coding parameters (LSP, codebook index), using CDMA as an example** (first communication scheme), **half rate** (second communication mode)),

means for dropping, in response to said request, a first portion of the signal-coding parameters to enable transmission of the frame using the second communication mode of the first communication scheme **(fig. 1, col. 5, line 61 – col. 6,**

line 15, #40, rate reducer, from full rate to half rate which is reducing (dropping) coding parameters),

means for transmitting the remaining signal coding parameters frame using the second communication mode of the first communication scheme (**fig. 1, #18, transmitting reduced rate of coded speech to receiver #44**);

said second station comprising:

means for receiving the remaining transmitted frame, wherein the transmitted frame comprises the information and a second portion of the signal- coding parameters (**fig. 1, #18, #20, mobile phone at receiving end; col. 1, lines 40-42, the encoded signal is transmitted to a receiving unit**),

means for transmitting the frame in accordance with the communication mode of the first communication scheme signal coding parameters using the remaining signal coding parameters (**fig. 1, #18, #20, signal from base station to a receiving mobile phone**).

Proctor discloses using "dim-and-burst" method to transmit signals by reducing frame rates from a full-rate to a half-rate in mobile communication. Although Proctor mentioned communication system could be a TDMA system (**col. 1, line 49**), Proctor uses a CDMA system as an example when describing his system (**col. 3, line 42**).

Proctor does not disclose interoperation between a first communication scheme and second communication scheme.

El-Maleh discloses the first communication mode of the first communication scheme is interoperable with a first communication mode of a second communication scheme and the second communication mode of the first communication scheme is not interoperable with the first communication mode of the second communication scheme (**El-Maleh, [0008-0010], CTX (CDMA system) and DTX (GSM system) is interoperable for speech segments (**first mode**) but inoperable for non-speech segments (**1/8 rate, second mode**)**).

Proctor and El-Maleh are analogous art and from a similar field of applicant's endeavor in speech coding. It would have been obvious to one of ordinary still in the art at the time of the invention to include compatible operation for speech segments and incompatible for non-speech segments as taught by El-Maleh in Proctor's teaching since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods, and in the combination each element merely would have performed the same function as it did separately. "A combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." KSR, 550 U.S. ___, 82 USPQ2d at 1395 (2007). One of ordinary skill in the art would have recognized that the results of the combination were predictable.

Proctor discloses using "dim-and-burst" method to transmit signals by reducing frame rates from a full-rate to a half-rate in mobile communication. Although Proctor discloses the rate is reduced from full-rate to half-rate (col. 5, line 45 – col. 6. line 15), Proctor does not explicitly discloses inserting information into the frame, wherein the information indicates that the frame is encoded in accordance with a particular communication mode of the first communication scheme that involves dropping the first portion of the signal-coding parameters.

Xu discloses in-band signaling method by dropping some packets to reduce communication congestion. Xu discloses inserting information into the frame, wherein the information indicates that the frame is encoded in accordance with a particular communication mode of the first communication scheme that involves dropping the first portion of the signal-coding parameters (**Xu, fig. 3, frame format with information bit segments 302 and 308; fig. 5 and fig. 6, shows 302 has 3 bits and 308 has 3 bits, indicating a particular communication mode, such as full rate, or half rate**).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine Proctor's teaching with Xu's teaching to insert bit segments to indicate that the frame is encoded in accordance with a particular communication mode. One having ordinary skill in the art would have been motivated to

make such a modification because the quality of service of wireless communication can be improved (**Xu, col. 2, liens 20-25**).

Proctor does not disclose means for generating replacement signal coding parameters to replace dropped coding parameters.

Chen discloses a method of encoding a wideband speech signal by dropping high frequency parameters between [4 kHz, 7 kHz] and regenerating these parameters at the decoder side (**Chen, fig. 10, col. 2, lines 11-55, at encoding side, not bits allocated for higher frequency; at decoding side, generating magnitude spectrum according to signal-to-masking ratio and generating phase spectrum randomly**).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine Proctor, El-Maleh, Xu's teaching with Chen's teaching to obtain a version of frame encoded in accordance with full rate (wideband). One having ordinary skill in the art would have been motivated to make such a modification to improve sound quality (**Chen, col. 2, lines 12-55**).

9. Claims 64, 70, 77, 87 and 94 are rejected under 35 U.S.C. 103(a) as being unpatentable over Proctor in view of Xu, Chen and further in view of Jacobs et al. (US Pat. 5,414,796, previously cited, hereinafter referred to as Jacobs).

Regarding claims 64, 70, 77, 87 and 97, the modified teaching of Proctor discloses in-band signaling by dim-and-burst and regenerating dropped coding parameters at decoder side.

Proctor fails to but Jacobs discloses the dropped portion of the signal-coding parameters comprises fixed codebook indices and wherein generating replacement signal-coding parameters comprises randomly generating replacement fixed codebook indices **(Jacobs, col. 12, lines 44-60, generates random code vectors)**.

Proctor and Jacobs are analogous art and from a similar field of applicant's endeavor in speech coding. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Proctor's teaching with Jacobs's teaching to adjust bit rate based on the decided rate and rate control commands (a request) and drop codebook index to reduce bit rate. The claimed invention is merely a combination of old elements, and in the combination each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

10. Claims 72 and 89 are rejected under 35 U.S.C. 103(a) as being unpatentable over Proctor in view of Xu, Chen and further in view of Garg ("IS-95 CDMA and CDMA 2000", previously cited, Prentice Hall, 2000).

Regarding claims 72 and 89, Proctor discloses in-band signaling using dim-and-burst using CDMA devices. Proctor fails to but Garg discloses the device is a CDMA2000 system.

It would have been obvious to one of ordinary still in the art at the time of the invention was made to substitute CDMA with CDMA2000, since each individual element and its function are shown in the prior art and one of ordinary skill in the art could have substituted one known element for another by known methods. "Simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for the improvement." KSR, 550 U.S. ___, 82 USPQ2d at 1395 (2007). One of ordinary skill in the art would have recognized that the results of the simple substitution were predictable.

Allowable Subject Matter

11. Claim 142 is allowed.

12. The following is an examiner's statement of reasons for allowance:

Claim 142 is directed to a method of interoperation of code division multiple access 2000 (CDMA2000) system with a third generation partnership project (3GPP) system. The claimed invention includes following features:

(1) CDMA2000 system uses a variable bit rate wideband codec (VBR-WB) and 3GPP system uses an adaptive multi-rate wideband codec (AMR-WB);

(2) full-rate of CDMA2000 is interoperable with 3GPP system but half-rate of CDMA2000 is not interoperable with 3GPP;

(3) When receiving a frame, from the header the frame, if it is indicated that the speech is encoded as half-rate of CDMA2000 (a signaling half rate or an interoperable half rate) by dropping some coding parameters, regenerating and replacing the dropped coding parameters to restore to a pseudo full-rate mode;

(4) further transmitting the signal using 3GPP communication system. The pseudo full rate of CDMA2000 is interoperable with a rate (communication mode) of 3GPP system.

Proctor (US Pat. 5,519,779) discloses a method of in-band signaling using dim-and-burst in wireless communication. Proctor discloses when two CDMA systems are communicating in full-rate, if signaling needs to be inserted, the system maps speech encoded with a high rate to a low rate (e.g., reducing full-rate to half-rate) so that the signaling could be inserted. Proctor fails to disclose regenerating and replacing the dropped coding parameters to restore the speech coding to a higher rate. Proctor also fails to disclose further transmitted the pseudo full rate signal in 3GPP communication system.

Chen (US Pat. 6,014,621) discloses a wideband speech coding method and transmitting the coded speech thought a limited bandwidth. Chen discloses (Chen, col. 2, lines 13-55) no bits are allocated for the frequency range [4 kHz, 7 kHz] at the encoding side (i.e., dropping coding parameters). At the receiving side, these dropped coding parameters for high frequency components are regenerated and replaced. Chen fails to disclose fails to disclose further transmitting the signal using 3GPP communication system. The generated pseudo full rate of CDMA2000 is interoperable with a communication mode of 3GPP system.

El-Maleh et al. (US PG Pub. 2002/0101844) discloses a method of interoperating two communication systems using different methods for comfort noise. A CDMA system uses discontinuous transmission (DTX) and GSM uses continuous transmission (CTX) for comfort noise. El-Maleh discloses converting DTX and CTX frames at a base station so that comfort noise in CDMA and GSM systems is interoperable. When converting CTX to DTX, the comfort noise is dropped at the base station and silence identification (SID) and noise parameters are sent. At the receiving mobile station, noise is regenerated based on transmitted noise parameters. El-Maleh fails to disclose further transmitting the signal using 3GPP communication system. The generated pseudo full rate of CDMA2000 is interoperable with a communication mode of 3GPP system.

Prior art of record, either alone or in combination, does not teach or suggest all features above in combination with other recited limitations, therefore, fails to anticipate or render obvious the claimed invention.

13. Claims 6, 114, 121, 126, 130, 136 and 141 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 114, 121, 126, 130, 136 and 141 include features of interoperating a CDMA2000 using VBR-WB codec with 3GPP system using AMR-WB codec. In combination with limitations of base claim and all intervening claims, these claims are not obvious and are allowable.

Claim 6, which directly or indirectly depends from claim 65, 63 and 14, recites dropping fixed codebook indices and regenerating these dropped codebook indices. In combination with limitations of base claim and all intervening claims, claim 6 is not obvious and is allowable.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Padovani et al. (US Pat. 5,504,773) discloses a signal frame header of in-band signaling.

Morgan et al. (US Pat. 2003/0208715) discloses frame header format for in-band signaling.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JIALONG HE whose telephone number is (571) 270-5359. The examiner can normally be reached on Monday-Thursday, 7:00AM-4:30PM, ALT. Fridays, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Wozniak can be reached on (571)272-7632. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JH/

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